Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

**Notes Questions for the Unit 3, Part 4 Notes – Biogeochemical Cycles**

Mrs. Krouse, AP Biology, 2015-2016

***Vocabulary:*** *For each of the terms listed below, fill in the definition given in the notes in the second column.*

|  |  |
| --- | --- |
| **Vocabulary Term** | **Definition(s) Given in the Notes** |
| Biogeochemical Cycles |  |
| Assimilation |  |
| Release |  |
| Reservoir |  |
| Photosynthesis |  |
| Cellular Respiration |  |
| Decomposition |  |
| Combustion |  |
| Transpiration |  |

***Practice Questions:*** *Answer the following questions thoroughly and accurately in complete sentences.*

1. Why do we say that energy FLOWS through an ecosystem, while matter CYCLES through an ecosystem?
2. For the elements listed in the chart below, place a checkmark indicating which macromolecules (i.e. carbohydrates, lipids, nucleic acids, and proteins) each element is found in.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Carbohydrates** | **Lipids** | **Nucleic Acids** | **Proteins** |
| Carbon |  |  |  |  |
| Hydrogen |  |  |  |  |
| Oxygen |  |  |  |  |
| Nitrogen |  |  |  |  |
| Phosphorus |  |  |  |  |
| Sulfur |  |  |  |  |

1. Fill in the chart below to compare / contrast the processes that occur during the nitrogen cycle. The first row has been completed for you as an example.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name of Process** | **Process of Assimilation or Release?** | **Starting Molecule** | **Ending Molecule** | **Location of Process** | **Helper organisms or processes?**  (ex: bacteria, lightning) |
| Nitrification | Assimilation | 1) N2 in air  2) NH4+ in soil | 1) NO2-  then NO3-  2) NO3- | Converts nitrogen from the air or soil into a form that plants can take in | 1) cosmic radiation, meteor trails, and lightning  2) some species of soil bacteria |
| Nitrogen Fixation |  |  |  |  |  |
| Denitrification |  |  |  |  |  |
| Ammonification |  |  |  |  |  |

1. How does increased sulfur in the air negatively affect living things?
2. Explain how eutrophication results in dead zones in bodies of water.